

## **AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in this application:

## **LISTING OF CLAIMS:**

Claims 1 to 10. (Canceled).

11. (Currently Amended) The magnetoresistive layer system according to claim ~~40~~ 13, wherein the hard magnetic layer and the soft magnetic layer are ferromagnetically exchange coupled.

Claim 12. (Canceled).

13. (Currently Amended) ~~The~~ A magnetoresistive layer system ~~according to claim 40,~~ comprising:

a magnetoresistive layer stack that works substantially on the basis of one of a GMR effect and an AMR effect;

a layer array for generating a magnetic field which acts upon the magnetoresistive layer stack, the layer array situated at least one of (a) on and (b) below a magnetoresistive region of the magnetoresistive layer stack and including at least one hard magnetic layer and at least one soft magnetic layer, the at least one soft magnetic layer being adjacent to the at least one hard magnetic layer;

wherein the layer array has a plurality of soft magnetic layers and a plurality of hard magnetic layers, which are combined into layer pairs having a hard magnetic layer and an adjacent soft magnetic layer.

14. (Currently Amended) The magnetoresistive layer system according to claim ~~40~~ 13, wherein the soft magnetic layer is composed of a CoFe alloy, Co, Fe, Ni, an FeNi alloy, and magnetic alloys which contain these materials.

15. (Currently Amended) The magnetoresistive layer system according to claim ~~40~~ 13, wherein the soft magnetic layer has a thickness between 1 nm and 50 nm.

16. (Previously Presented) The magnetoresistive layer system according to claim 15, wherein the thickness is between 1 nm and 10nm.

17. (Currently Amended) The magnetoresistive layer system according to claim ~~40~~ 13, wherein the hard magnetic layer is composed of one of a CoCrPt alloy, a CoSm alloy, a CoCr alloy, a CoCrTa alloy, a CoPt alloy, and an FePt alloy.

18. (Currently Amended) ~~The A~~ magnetoresistive layer system ~~according to claim 10,~~ comprising:

a magnetoresistive layer stack that works substantially on the basis of one of a GMR effect and an AMR effect;

a layer array for generating a magnetic field which acts upon the magnetoresistive layer stack, the layer array situated at least one of (a) on and (b) below a magnetoresistive region of the magnetoresistive layer stack and including at least one hard magnetic layer and at least one soft magnetic layer, the at least one soft magnetic layer being adjacent to the at least one hard magnetic layer;

wherein a thickness of the hard magnetic layer is between 20 nm and 100 nm.

Claim 19. (Canceled).

20. (Currently Amended) The sensor element according to claim ~~49~~ 22, wherein the sensor element is for detecting magnetic fields with respect to at least one of strength and direction.

21. (Currently Amended) The sensor element according to claim ~~40~~ 13, wherein the at least one soft magnetic layer is a thin layer deposited onto the at least one hard magnetic layer.

22. (Currently Amended) ~~The A~~ sensor element ~~according to claim 19,~~ comprising:

a magnetoresistive layer system, in an environment of a magnetoresistive layer stack that works substantially on the basis of one of a GMR effect and an AMR effect, the magnetoresistive layer system including:

a layer array for generating a magnetic field which acts upon the magnetoresistive layer stack, the layer array situated at least one of (a) on and (b) below a magnetoresistive region of the magnetoresistive layer stack and including at least one hard magnetic layer and at least one soft magnetic layer, the at least one soft magnetic layer being adjacent to the at least one hard magnetic layer;

wherein the at least one soft magnetic layer is a thin layer deposited onto the at least one hard magnetic layer.